20728 56th Ave. W
Lynnwood, WA 98036
Phone: 800-351-9563
Fax: 425-328-1554
www.environix.com
License #: SCHATSU972OZ
Schatz Services Unlimited, DBA Environix

Final Inspection Report

CLIENT: Schwartz, Andrew

INSPECTOR: Dan Ventura

Date: 6/17/2011

CLIENT INFORMATION

Customer: Andrew Schwartz Organization: Real Property Disposal (9PZF-10)
Phone – Cell: 253-931-7556
Phone – Other: _____
Email: Andrew.schwartz@gsa.gov
Fax: _____
Mailing Address: 400 15th St. SW Auburn, WA 98001
Property Address: 8620 NE 26th Pl Clyde Hill, WA 98004
Additional Information: _____

ABOUT ENVIRONIX

We are a national environmental services firm specializing in mold, allergen, and indoor air quality related problems. We offer an array of "Indoor Environmental Solutions" to residential, commercial, and government clientele. The corporate franchise headquarters are located in Seattle, WA. We are staffed with the most talented environmental professionals in the industry whose education and experience equips them to diagnose, prevent or repair a wide variety of indoor environmental problems.

OUR GUARANTEE

For many years Environix has been providing builders, homeowners, insurance companies and commercial property owners with cost effective solutions to both prevent and treat mold related problems. Every remediation job carried out by Environix is covered by a **lifetime warranty**.

MEMBERSHIPS AND CERTIFICATIONS

- Built Green Member
- Environmental Microbiology Laboratories (EMLab)
- American Indoor Air Quality Council
- Indoor Air Quality Association, Inc. Member (IAQA)
- Indoor Environmental Standards Organization (IESO)
- Master Builders Association of King, Snohomish and Pierce Counties
- Certified Mold Inspectors and Contractors Institute (CMICI)

CLIENTS WE'VE SERVED

- *US Coast Guard*
- *Seattle Mariners*
- *Port of Seattle*
- *UW Medicine*
- *King County Health*
- *Seattle Housing Authority*
- *Many more!*

JOBSITE PHOTOS







INSPECTION PROCESS AND SAMPLING PROCEDURES

Surface / Bulk sampling is used to identify a mold type at a specific location. This technique is useful also in ruling out possible discolorations or staining that sometimes exhibit mold like characteristics. Typically a cotton swab or piece of clear tape is used to collect a small quantity of material. In turn this is analyzed either with a fungi screen or culture analysis. Environmental Microbiology Laboratory (EMLab) performs the testing procedures for these results.

Air sampling is the most effective method for determining whether a mold infestation is potentially creating an unsafe living environment. Our testing procedure incorporates the Aero Tech Laboratory Aero-Cell cassette. Air quality is tested by drawing 15 cubic liters of air per min and impacting the airborne particles over a glass substrate. Typically the process runs for 5 minutes, producing a sample size of 75 cubic liters. Next, the cassette is sent to a laboratory, where the spores are identified and counted.

These numbers alone do not give us enough information to accurately determine the level of contamination. Outside control samples are needed to identify the quantity of mold found in the natural environment. Indoor levels are normally found at approximately 50% of outside samples.

OBSERVATIONS

General Information

- The home had been subject to several roof leaks.
- The home had been unoccupied for an extended period of time.

Furnace / HVAC

- The home is currently heated by 2 natural gas forced air furnaces.

Kitchen:

- Some staining on vinyl flooring in front of refrigerator and dishwasher, likely secondary to spills.
- No increased moisture content noted in tested building materials.
- No significant visible mold growth observed.
- No suspicious temperature differentials noted on inspection with FLIR.
- No obvious signs of water damage.
- RH: 47.9% Temp: 66.6F CO2 = 308ppm CO = 0ppm

Living Room:

- Wood fireplace located in this area.
- Wet bar located in this area.
- Heavy water damage and mold growth noted on sheetrock at vaulted ceiling, likely secondary to previously resolved roof leaks.
- Heavy mold growth noted on sheetrock along exterior wall, immediately below the affected portions of the ceiling.
- Water staining noted on wooden beams and brick around fireplace, likely secondary to previous roof leaks.
- No increased moisture content noted.
- RH: 55.3% Temp: 63.6F CO2 = 286ppm CO = 0ppm

Recommendations

- Establish containment.
- Install HEPA scrubber for negative pressurization throughout the duration of work.
- Remove all carpeting and pad.
- Remove affected sheetrock, trim, and underlying insulation.
- Clean/treat/encapsulate contaminated framing, sheathing, or subflooring.
- Perform detailed HEPA vacuuming of the entire contained area.
- Apply EPA-registered anti-microbial agents to the entire contained area via ultra-low volume fogger.

Bedroom 1:

- Heavy water damage noted to sheetrock on vaulted ceiling, and to exterior wall above window.
- Mold growth visible on affected sheetrock, and on exterior wall behind curtains.
- No increased moisture readings noted.
- RH: 59.6% Temp: 64.0F CO2 = 289ppm CO = 0ppm

Recommendations

- Establish containment.
- Install HEPA scrubber for negative pressurization throughout the duration of remediation work.
- Remove all carpet and pad.
- Remove affected sheetrock, trim, and underlying insulation.
- Clean/treat/encapsulate contaminated framing, sheathing, or subflooring.
- Perform detailed HEPA vacuuming of the entire contained area.
- Apply EPA-registered anti-microbial agents to the entire contained area via ultra-low volume fogger.

Laundry:

- No exhaust fan noted.
- Minor potential mold growth noted immediately below washer supply valves on sheetrock.
- Evidence of previous water damage was noted in cabinetry below utility sink.
- Increased moisture content noted in vinyl flooring in the washing machine area, likely secondary to previous flooding or plumbing leak.
- RH: 64.3% Temp: 63.8F CO2 = 221ppm CO = 0ppm

Recommendations

- Establish containment.
- Install HEPA scrubber for negative pressurization throughout the duration of work.
- Remove all vinyl flooring and underlay.
- Remove affected sheetrock, baseboard, and underlying insulation.
- Install dehumidifier and air movers to dry remaining wet subfloor for a period of up to 3 days.
- Clean/treat/encapsulate contaminated framing, sheathing, or subflooring.
- Perform detailed HEPA vacuuming of the entire contained area.
- Apply EPA-registered anti-microbial agents to the entire contained area via ultra-low volume fogger.

Hall Bathroom:

- Functional exhaust fan installed and set on a 60 minute twist-timer.
- Fully tiled shower enclosure with a vinyl pan appears in adequate condition.
- No increased moisture content noted in tested building materials.
- No significant visible mold growth observed.
- No suspicious temperature differentials noted on inspection with FLIR.
- No obvious signs of water damage.
- RH: 63.1% Temp: 63.5F CO2 = 297ppm CO = 0ppm

Entry:

- Furnace closet in this area with 2 gas furnaces and electric HWT (NAF)
- No increased moisture content noted in tested building materials.
- No significant visible mold growth observed.
- No suspicious temperature differentials noted on inspection with FLIR.
- No obvious signs of water damage.

Bedroom 2:

- Condensation based water staining and minor mold growth noted on wind sill.
- Obvious painting had been done on ceiling at exterior walls.
- No increased moisture content noted.
- No other evidence of water damage.
- RH: 64.5% Temp: 53.2F CO2 = 437ppm CO = 0ppm

Recommendations

- Minor surface growth was noted in this area, at this time the there is no reason to suspect that the underlying building materials have been affected. Professional remediation is not necessary and the client may clean the area with standard surfactants and/or EPA-registered anti-microbial agents. Once the area is cleaned it may be painted or repaired as needed.

Bedroom 2 Bathroom:

- Old and likely inadequate bathroom exhaust fan installed.
- No increased moisture content noted in tested building materials.
- No significant visible mold growth observed.
- No suspicious temperature differentials noted on inspection with FLIR.
- No obvious signs of water damage.
- RH: 53.1% Temp: 63.4F CO2 = 316ppm CO = 0ppm

Master Bedroom:

- Heavy water damage noted to sheetrock ceiling near exterior door.
- Significant mold growth observed in areas of water damaged sheetrock.
- No increased moisture content noted.
- RH: 53.4% Temp: 63.1F CO2 = 314ppm CO = 0ppm

Recommendations

- Establish containment.
- Install HEPA scrubber for negative pressurization throughout the duration

of work.
- Remove all carpeting and pad.
- Remove affected sheetrock, trim, and underlying insulation.
- Clean/treat/encapsulate contaminated framing, sheathing, or subflooring.
- Perform detailed HEPA vacuuming of the entire contained area.
- Apply EPA-registered anti-microbial agents to the entire contained area via ultra-low volume fogger.

Master Bathroom:

- No increased moisture content noted in tested building materials.
- No significant visible mold growth observed.
- No suspicious temperature differentials noted on inspection with FLIR.
- No obvious signs of water damage.

Front Den:

- No increased moisture content noted in tested building materials.
- No significant visible mold growth observed.
- No suspicious temperature differentials noted on inspection with FLIR.
- Minor deformation noted to casing above trapezoid window, likely secondary to water damage from a roof leak.
- RH: 53.0% Temp: 63.4F CO2 = 331ppm CO = 0ppm

Dining Room:

- No increased moisture content noted in tested building materials.
- Minor mold growth noted in a small area of sheetrock on ceiling, but not associated with significant water damage
- No suspicious temperature differentials noted on inspection with FLIR.
- No obvious signs of water damage.

Recommendations

- Establish containment.
- Install HEPA scrubber for negative pressurization throughout the duration of work.
- Remove affected sheetrock and underlying insulation.
- Clean/treat/encapsulate contaminated framing, sheathing, or subflooring.
- Perform detailed HEPA vacuuming of the entire contained area.
- Apply EPA-registered anti-microbial agents to the entire contained area via ultra-low volume fogger.

2nd Level:

- 2 window mounted air conditioners and 2 window mounted exhaust fans located in this area.
- One area of suspected surface growth noted in a similar pattern to a piece of furniture.
- One section of vaulted ceiling sheetrock had been removed revealing new framing, sheathing and skip sheathing.
- Older sections of exposed framing appear to be heavily water damaged and may have harbored significant mold growth in the past.
- RH: 58.6% Temp: 64.1F CO2 = 309ppm CO = 0ppm

Recommendations

- Minor surface growth was noted in this area, at this time the there is no

reason to suspect that the underlying building materials have been affected. Professional remediation is not necessary and the client may clean the area with standard surfactants and/or EPA-registered anti-microbial agents. Once the area is cleaned it may be painted or repaired as needed.
- Encapsulate remaining staining and water marks on exposed sections of roof framing.

Garage:

- Extensive mold growth noted in sheetrock at both front and rear of garage, likely secondary to previous roof leaks.

Recommendations

- Establish containment.
- Install HEPA scrubber for negative pressurization throughout the duration of work.
- Remove affected sheetrock and underlying insulation.
- Clean/treat/encapsulate contaminated framing, sheathing, or subflooring.
- Perform detailed HEPA vacuuming of the entire contained area.
- Apply EPA-registered anti-microbial agents to the entire contained area via ultra-low volume fogger.

Garage Office:

- No increased moisture content noted in tested building materials.
- No significant visible mold growth observed.
- No suspicious temperature differentials noted on inspection with FLIR.
- No obvious signs of water damage.
- Heated by electric baseboard heating.
- RH: 55.6% Temp: 64.5F CO2 = 301ppm CO = 0ppm

Notes and Terms:

- The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) recommends a concentration of CO2 no more than **700 ppm** above the ambient air (outside) concentration in order to minimize human odors and maintain comfort.
- Carbon dioxide is a colorless, odorless gas. It is produced when any carbon-based material used for fuel (coal, oil, wood, etc.) is burned. When fuel burning is not a factor, the main sources are tobacco smoke, human and animal respiration. Carbon dioxide is given off whenever we exhale. Cars, trucks, industrial equipment, and burning fuel for power are some of the major contributors to CO_2 in the air.
- Ideally, CO concentrations indoors are expected to be the same as CO concentrations outdoors. CO concentrations are typically around **one to two parts per million** parts of air (ppm) or less. Concentrations are usually lower in rural areas. Finding CO concentration higher indoors than outdoors indicates an indoor source of CO, or a source very close to your home.
- Carbon monoxide is an odorless, colorless gas often formed in the process of incomplete combustion of organic substances, including fuels. CO can cause serious health problems.

RECOMMENDATIONS

- **Address all areas of noted mold growth as listed above.**
- **Remove remaining porous items such as curtains, drapes, and carpeting.**
- **Perform HEPA vacuuming of the entire home to remove remaining excess mold spores.**
- **Apply anti-microbial agents to the entire home.**
- **All large HEPA scrubbers to run for at least 48 hours to filter all air within the home.**
- **Perform final IAQ sampling to ensure normal levels of mold spores.**

INTERPRETING YOUR LABORATORY RESULTS

Though toxic molds have received significant media attention lately, little is yet known of their interaction with the human body. The most common reaction we feel comes from an allergic response to airborne spores. This occurs when our body produces histamines in a response to mold spores entering our bodies, in the same way grass pollens can bring about sneezing and congestion. *Toxic* molds, on the other hand, are still a matter of contentious debate among the scientific and medical community.

Thus it is important to interpret your laboratory results with caution, recognizing that every day our bodies come in contact with toxic mold spores. We are looking for levels elevated beyond our natural environment.

The following is a brief description of the terms commonly found in your report:

Volume (m) Volume is provided in cubic meters. 5 minutes at 15 liters per minute yields 75 liters, or .075 cubic meters.

Result: This column expresses the spore count per cubic meter, useful when comparing samples with different quantities measured. Also can be used to extrapolate total counts in a given space.

Limitations:
Please note that while air sampling is a useful tool for identifying probable sites of mold growth, the number and type of samples collected during routine investigations is not sufficient to provide statistically significant data. Therefore we cannot depend on the results of air sampling alone to determine a site of abnormal mold growth. Additionally sampling can be performed to provide statistically significant data. However, due to the high cost of obtaining this data, Please contact your Environix technician for more information.

Please refer to your Environmental Microbiology Laboratory (EMLab) report for a detailed explanation of additional terms.

Analysis of Results

Air Samples: No government guidelines currently exist for determining threshold limit values of mold airborne mold concentrations. Individual contractors and organizations must establish their own criteria for determining the presence of indoor mold amplification. Our criteria is based on the Typical Outdoor Data by Location as provided by EMLab.

The following criteria is used to determine the presence of an elevated number of indoor mold spores.

> The indoor sample must be elevated beyond the 97.5% range for the average 'high' spore count for the type of mold in question. Aspergillus/Penicillium, for example, reaches a 'high' reading at 2,600 spores/m^3. Therefore, an indoor sample is considered elevated and statistically significant if the number of Aspergillus/Penicillium spores is greater than 2,600 spores/m^3.

Your Results

Individually, the following species were identified in your samples.

Species	Threshold	Outdoor	Living Room	Master Bedroom	Garage Office
Alterneria:	310				
Ascospores:	5400	3100	1700	530	590
Basidiospores:	20000	1200	590	320	590
Botrytis:			53		
Chaetomium:	120		13		
Cladosporium:	5900	110	690	110	2400
Epicoccum:	290				13
Nigrospora:	240				
Penicillium/Aspergillus:	2600	210	4600	3300	5800
Pithomyces:					
Rusts:	290	40			
Smuts, Periconia, Myxomycetes :	850	27	93	40	27
Stachybotrys:	460				
Oidium:		190			
Torula:			13		
Ulocladium:			27		120

Probable Amplification:
At least one of the fungi tested was collected at levels above the threshold, indicating a site of probable mold amplification and growth. Based on EMLab data, the fungi in question reaches these levels in outside control samples less than 2.5% of the time. Please refer to the attached report for more detailed information.

TIPS FOR PREVENTING FUTURE MOISTURE AND MOLD PROBLEMS

- Monitor relative humidity levels, maintaining an RH of <50%. Inexpensive hygrometers can be purchased online or at your local hardware store.
- Encourage active air flow throughout the building. Current code calls for 1 CFM per 100 sqft of floor space plus 7.5 CFM per bedroom, plus 1 bedroom. For a 2,500 sqft home with three bedrooms, this translates to 55CFM of fresh air continuously. 1*(2500/100)+(7.5*4) = 55 CFM.
- Periodically check the crawlspace for signs of flooding or water intrusions.
- Periodically check plumbing fixtures and hot water heater for signs of water leaks.
- Maintain comfortable living temperatures in all living quarters, including basement areas. As temperatures drop, the potential for localized condensation increases.
- Replace furnace filter according to manufacturers instructions.